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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,926

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EXAMINER

BUIE, NICOLE M

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,926	<b>Applicant(s)</b> LOMMERTS ET AL.	
	<b>Examiner</b> NICOLE M. BUIE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060914</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 15-22** rejected under 35 U.S.C. 103(a) as being unpatentable over Hackel et al. (DE 19519539 A1, see machine translation for citation) in view of Dempsey et al. (WO 00/73378 A1).

**Regarding claims 15, 20, and 23**, Hackel et al. discloses a bituminous binder composition comprising 50-99 wt% of bitumen (as compared to 60-99.75 wt% as required by said claim) (P1/seventh paragraph), elastomer (P2/second paragraph), 2-25 wt% of a mono-alkyl

Art Unit: 1796

ester of a vegetable oil (as compared to 0.1-30.0 wt% or 0.3 to 25.0 wt% as required by said claims) (P2/fourth paragraph).

However, Hackel et al. does not disclose the specific amount of elastomer as required by said claims. Dempsey et al. teaches 0.5 to 12 wt% of elastomer in a bituminous composition (as compared to 0.05-5.0 wt% or 0.1 to 4.5 wt% as required by said claims) (P4/L22-25). Hackel et al. and Dempsey are analogous art concerned with the same field of endeavor, namely bituminous composition comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to use the amount of elastomer of Dempsey et al. in the composition of Hackel et al., and the motivation to do so would have been as Dempsey et al. suggests, to have a composition with good rheological properties (P2/L6-12).

However, Hackel et al. does not disclose an amide additive. Additionally, Dempsey et al. teaches an amide additive (P4/L22-24). Dempsey et al. further teaches 0.1-3 wt% (as compared to 0.1-5.0 wt% as required by said claim) (P4/L22-24). It would have been obvious to one of ordinary skill in the art at the time of invention to add an amide additive, and the motivation to do so would have been as Dempsey et al. suggests, to provide compositions with significantly lower viscosities (P5/L9-12).

**Regarding claim 16**, Hackel et al. discloses a polymer modified bitumen with the penetration of 60 to 150 x 10<sup>-1</sup> mm (P2/fifth paragraph).

**Regarding claims 17-19**, Hackel et al. discloses styrene butadiene rubber (P2/second paragraph).

**Regarding claims 21 and 22**, Hackel et al. discloses methyl ester of rapeseed oil (P1/seventh paragraph and twelfth paragraph).

Art Unit: 1796

**Regarding claims 24-26**, Hackel et al. discloses cross-linking agents (P2/second paragraph).

**Claims 27-32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hackel et al. (DE 19519539 A1, see machine translation for citation) in view of Dempsey et al. (WO 00/73378 A1) as applied to claims 24-26 above, and further in view of Matheson et al. (US 4,129,542).

**Regarding claims 27-32**, modified Hackel et al. discloses the composition as shown above in claims 24-26.

However, modified Hackel et al. does not disclose a the curing agent is a sulfur-donor compound. Matheson et al. teaches the curing agent is a sulfur-donor compound (i.e. "tetramethylthiuram sulfide") in a bituminous composition (Abstract, C3/L45-50, C4/L25-35). Additionally, Matheson et al. teaches using 1.0 wt % of curing agent (C3/L45-50, C4/L25-35). Modified Hackel et al. and Matheson et al. are analogous art concerned with the same field of endeavor, namely bituminous compositions comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to add the curing agent of Matheson et al. in the composition of modified Hackel et al., and the motivation to do so would have been as Matheson et al. suggests, to have the curative react with the asphalt component as well as the rubber to provide superior properties (C2/L50-61).

**Claims 33-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hackel et al. (DE 19519539 A1, see machine translation for citation) in view of Dempsey et al. (WO 00/73378 A1), Memon (US 6,444,731), and Barthel et al. (US 2004/0033308).

**Regarding claim 33**, Hackel et al. teaches a process for preparing a bituminous binder composition comprising mixing the an elastomer, a mono-alkyl ester of a vegetable oil, and bitumen.

However, Hackel et al. does not disclose an amide additive. Dempsey et al. teaches an amide additive in a bituminous composition (P4/L22-24). Hackel et al. and Dempsey are analogous art concerned with the same field of endeavor, namely bituminous composition comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to add an amide additive, and the motivation to do so would have been as Dempsey et al. suggests, to provide compositions with significantly lower viscosities (P5/L9-12).

However, Hackel et al. does not disclose the specific three steps (i), (ii), and (iii) as required by said claim. Memon teaches that (i) the elastomer is treated with a dispersion agent, such as vegetable oil (C2/L15-23), (ii) treated elastomer is added to hot asphalt (C1/L50-51), and (iii) adding an additive to the mixture as obtained in step (ii) (C2/L29-34). Hackel et al. and Memon are analogous art concerned with the same field of endeavor, namely bituminous compositions comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to use the steps of Memon in the process of Hackel et al, and the motivation to do so would have been as Memon suggests, the sequence of steps results in improved homogeneity of the modifier within the asphalt (C2/L56-67).

Art Unit: 1796

However, Hackel et al. does not disclose that the bitumen having been preheated to a temperature in the range of 100°C to 210°C. Barthel et al. teaches to prepare a hot bituminous mixture out of bitumen, generally temperatures are in the range between 150°C and 250°C [0002]. Hackel et al. and Barthel et al. are analogous art concerned with the same field of endeavor, namely bituminous compositions comprising polymers. It would have been obvious to one of ordinary skill in the art at the time of invention to use the temperature of Hackel et al. in preheating of bitumen in the process of Hackel et al., and the motivation to do so would have been as Barthel suggests, to improve the ability to spread the asphalt and to improve the pliability of the asphalt mixture [0005].

**Regarding claim 34**, Hackel et al. discloses a polymer modified bitumen with the penetration of 60 to  $150 \times 10^{-1}$  mm (P2/fifth paragraph).

**Regarding claims 35-37**, Hackel et al. discloses styrene butadiene rubber (P2/second paragraph).

**Regarding claim 38**, Hackel et al. does not disclose the specific amount of elastomer as required by said claims. Additionally, Dempsey et al. teaches 0.5 to 12 wt% of elastomer (as compared to 0.05-5.0 wt% or 0.1 to 4.5 wt% as required by said claims) (P4/L22-25). It would have been obvious to one of ordinary skill in the art at the time of invention to use the amount of elastomer of Dempsey et al. in the composition of Hackel et al., and the motivation to do so would have been as Dempsey et al. suggests, to have a composition with good rheological properties (P2/L6-12).

**Regarding claims 39 and 40**, Hackel et al. discloses methyl ester of rapeseed oil (P1/seventh paragraph and twelfth paragraph).

**Regarding claim 41**, Hackel et al. discloses 2-25 wt% of a mono-alkyl ester of a vegetable oil (as compared to 0.3 to 25.0 wt% as required by said claim) (P2/fourth paragraph).

**Regarding claims 42-44**, Hackel et al. discloses cross-linking agents (P2/second paragraph).

**Claims 45-52** rejected under 35 U.S.C. 103(a) as being unpatentable over Hackel et al. (DE 19519539 A1, see machine translation for citation) in view of Dempsey et al. (WO 00/73378 A1), Memon (US 6,444,731), and Barthel et al. (US 2004/0033308) as applied to claims 42-44 above, and further in view of Matheson et al. (US 4,129,542).

**Regarding claims 45-52**, modified Hackel et al. discloses the composition as shown above in claims 24-26.

However, modified Hackel et al. does not disclose the curing agent is a sulfur-donor compound. Matheson et al. teaches the curing agent is a sulfur-donor compound (i.e. "tetramethylthiuram sulfide") in a bituminous composition (Abstract, C3/L45-50, C4/L25-35). Additionally, Matheson et al. teaches using 1.0 wt % of curing agent (C3/L45-50, C4/L25-35). Modified Hackel et al. and Matheson et al. are analogous art concerned with the same field of endeavor, namely bituminous compositions comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to add the curing agent of Matheson et al. in the process of modified Hackel et al., and the motivation to do so would have been as Matheson et al. suggests, to provide superior properties (C2/L50-61).



**Claims 51 and 52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hackel et al. (DE 19519539 A1, see machine translation for citation) in view of Dempsey et al. (WO 00/73378 A1) and Matheson et al. (US 4,129,542).

**Regarding claims 51 and 52**, Hackel et al. discloses a process for dressing a surface comprising coating the surface (i.e. road) with a bituminous binder composition comprising bitumen, elastomer, mono-alkyl ester of a vegetable oil (P1/seventh paragraph, P2/second paragraph (P2/eighth paragraph)).

However, Hackel et al. does not disclose an amide additive. Dempsey et al. teaches an amide additive (P4/L22-24) Hackel et al. and Dempsey are analogous art concerned with the same field of endeavor, namely bituminous composition comprising elastomers. It would have been obvious to one of ordinary skill in the art at the time of invention to add an amide additive, and the motivation to do so would have been as Dempsey et al. suggests, to provide compositions with significantly lower viscosities (P5/L9-12).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NICOLE M. BUIE whose telephone number is (571)270-3879. The examiner can normally be reached on Monday-Thursday with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MARK EASHOO, Ph.D./  
Supervisory Patent Examiner, Art Unit 1796  
18-Jul-08

/N. M. B./  
Examiner, Art Unit 1796  
7/16/2008